



INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

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<table style="width: 100%;"> <tr> <td style="width: 50%; vertical-align: top;"> (21) International Application Number: PCT/US00/10999 (22) International Filing Date: 24 April 2000 (24.04.00) (30) Priority Data: 60/130,814 23 April 1999 (23.04.99) US (63) Related by Continuation (CON) or Continuation-in-Part (CIP) to Earlier Application US 60/130,814 (CIP) Filed on 23 April 1999 (23.04.99) (71) Applicant (for all designated States except US): WILD FILE, INC. [US/US]; 3070 Ranchview Lane, P.O. Box 47038, Plymouth, MN 55447 (US). (72) Inventors; and (75) Inventors/Applicants (for US only): <u>SCHNEIDER</u>, Eric, D. [US/US]; 17020 12th Avenue North, Plymouth, MN 55447 (US). <u>GUSTAFSON</u>, Michael, J. [US/US]; 13570 95th Place North, Maple Grove, MN 55369 (US). <u>HAGLER</u>, Daniel, J. [US/US]; 42002 County 14 Boulevard, Kenyon, MN 55946 (US). </td> <td style="width: 50%; vertical-align: top;"> (74) Agent: VIKSNINS, Ann, S.; Schwegman, Lundberg, Woessner & Kluth, P.O. Box 2938, Minneapolis, MN 55402 (US). (81) Designated States: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG). Published <i>With international search report.</i> <i>Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i> </td> </tr> </table>			(21) International Application Number: PCT/US00/10999 (22) International Filing Date: 24 April 2000 (24.04.00) (30) Priority Data: 60/130,814 23 April 1999 (23.04.99) US (63) Related by Continuation (CON) or Continuation-in-Part (CIP) to Earlier Application US 60/130,814 (CIP) Filed on 23 April 1999 (23.04.99) (71) Applicant (for all designated States except US): WILD FILE, INC. [US/US]; 3070 Ranchview Lane, P.O. Box 47038, Plymouth, MN 55447 (US). (72) Inventors; and (75) Inventors/Applicants (for US only): <u>SCHNEIDER</u> , Eric, D. [US/US]; 17020 12th Avenue North, Plymouth, MN 55447 (US). <u>GUSTAFSON</u> , Michael, J. [US/US]; 13570 95th Place North, Maple Grove, MN 55369 (US). <u>HAGLER</u> , Daniel, J. [US/US]; 42002 County 14 Boulevard, Kenyon, MN 55946 (US).	(74) Agent: VIKSNINS, Ann, S.; Schwegman, Lundberg, Woessner & Kluth, P.O. Box 2938, Minneapolis, MN 55402 (US). (81) Designated States: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG). Published <i>With international search report.</i> <i>Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i>
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(54) Title: METHOD AND APPARATUS FOR DEALING WITH DATA CORRUPTION AND SHARED DISKS IN THE CONTEXT OF SAVING, USING AND RECOVERING DATA

Initial State

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#2	d2
#3	d3
#4	d4

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extra pages

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(57) Abstract

There is described a method of maintaining a record of changes to data on a recording medium and allowing reconstruction of the state of the medium at a prior time. Various alternative embodiments are provided to enhance and improve this process, including maintaining two copies in RAM of data that are compared to detect corruption prior to transferring to the recording medium, splitting logic protection and viewing, disguising the disk to protect against incompatible software, flushing a write cache by insuring a certain amount of time has passed, flushing a write cache by insuring a certain amount of free time has passed and inserting delays if required, inserting safe points after a drop in the rate of disk activity, inserting safe points periodically, flushing the entire OS cache after detecting the need to establish a safe point for one user, separating out user activity by watching directories and files, or the use of complex linked data structures to implement the engine where such data structures can be substantially reconstructed from sequentially organized tables in the event of corruption.

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INTERNATIONAL SEARCH REPORT

National Application No

PCT/US 00/10999

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 G06F11/14

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 G06F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5 255 270 A (YANAI ET AL.) 19 October 1993 (1993-10-19) abstract	1
A	US 5 893 140 A (VAHALIA ET AL.) 6 April 1999 (1999-04-06) column 17, line 7 -column 18, line 16	4,5
X	WO 99 12101 A (WILD FILE, INC.) 11 March 1999 (1999-03-11) page 115, line 28 -page 116, line 13	6-8
A	US 5 717 849 A (BRADY) 10 February 1998 (1998-02-10) abstract	9



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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>WO 98 26353 A (HELIX SOFTWARE CO.) 18 June 1998 (1998-06-18) page 7, line 8 - line 16</p>	10

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

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